Modified Water Deliveries Project: Alternatives 1, 2 and 3

Alternatives 1, 2, and 3 for the Modified Water Deliveries project were developed following an interagency 'brainstorming" meeting on May 20, 1999. The three alternatives can be summarized as follows

Alt. 1: Maximize Restudy Compatibility by;

- using the S345's and weirs for L67 A/C conveyance,
- using a STA water quality treatment buffer zone to manage seepage from the ENP (see Figure 1),
- removing the L29 levee but leaving the L29 canal to facilitate conveyance across Tamiami Trail, and
- using S355 and S356 to control seepage from WCA-3B.

Alt. 2: Maximize a Passive System Approach by;

- removing the L67 A/C levees and canals completely,
- using a partial cutoff wall south of Tamiami Trail to manage seepage from the ENP, and
- removing the L29 levee and filling the L29 canal to facilitate conveyance across Tamiami Trail.

Alt. 3: Adopt an Intermediate Approach by,

- using weirs in L67A levee, not constructing S345's and removing L67C levee and canal,
- controlling ENP seepage by moving seepage water south through S331
- using weirs across the Tamiami Trail levee in addition to the S355 structures
- managing seepage from WCA-3B by passing it south through S355 and S331.

Details of the assumptions used in the South Florida Water Management Model (SFWMMv3.7) to simulate these alternatives and compare them with simulations of the 1983 Base and 1995 Base conditions are given in Table 1.

Table 1. Assumptions used in SFWMM v3.7 to simulate Modified Water Deliveries Project Alternatives 1, 2 and 3.

Area/Issue	Alternative 1 Maximize Restudy Compatibility	Alternative 2 Maximize Passive System Approach	Alternative 3 Intermediate
L-67 Conveyance	• S345 at 1500 cfs discharging into R28C25 • S349 in L-67A canal (CA3 in model) • 2 weirs south of S345(approx 60 ft crest length each) • Rain driven targets for S345 flows • Target is NSM "like" wet season flow distribution across Tamiami Trail • Suggest using NSM H vs Q curve as starting point for sizing weirs (see fig 1)	• Remove L-67 A/C levees and canals completely	• Replace S345 with weir (approx 150 ft crest length) • 3 weirs south of S345 (approx 1000 ft crest length each) • S349 plug never open (separate canal reaches to N and S of S-349 in model)
L-29 East of L-67 extension	• Degrade levee • Leave L29 canal • S333 and S334 still operate • Rain driven operations for S333	• Remove L29 canal • Degrade L29 levee • S333 discharges into marsh • No S334	• S355 as built 2x1000 cfs • 2 weirs in L29 (approx 4000 ft crest length each) • S333 minimize flow - no flood control operations • S334 still in
ENP Seepage control	• S356A (capacity = 900 cfs) discharges south into STA • STA for WQ treatment • Chrome avenue collector canal with S356B (capacity = 300 cfs) pumping seepage back into STA	• L31N levee seepage turned off to simulated partial cutoff wall 8 miles long from Tamiami Trail to C1W canal • No S356A or B	• L31N acts as seepage collector • Seepage sent south through G211 & S331 (modeled as flood control) • No S356A,B
C-111 operations	• G211 for water supply only • S331 for water supply only • S176 operated same as 83 Base	• G211 for water supply only • S331 for water supply only • S176 operated same as 83 Base for	• NSM based cutoff for outflow through S332 A, B, D • Remainder of outflow to east

Table 1. Assumptions used in SFWMM v3.7 to simulate Modified Water Deliveries Project Alternatives 1, 2 and 3.

Area/Issue	Alternative 1 Maximize Restudy Compatibility	Alternative 2 Maximize Passive System Approach	Alternative 3 Intermediate
C-111 operations	for flood control (5.5-6.0 ft) • S332A,B,D pumps (5.1-5.5 ft)	flood control (5.5-6.0 ft) • S332A,B,D pumps (5.1-5.5 ft)	through S332E (500 cfs) or south through S18C • Canal stages south of S331 approx. same as 95 Base • S176 operated same as 95 Base for flood control (4.8-5.0 ft) • S332A,B,D pumps (4.5-4.8 ft)

Assumptions common to all alternatives:

- Rain driven operations.
- S12's still in L29 to west of L67 extension and have rain driven operations
- Tamiami trail is "fixed" to remove any constraints
- L67 extension removed
- S336, S194, S196 used for water supply only
- C111 project in place
  - S332 removed
  - S174 assumed not operational
  - S332A,B,D assumed operational
  - S175 removed
- 8.5 sma assumptions
  - 8.5 sma was considered to be its own basin, separated by a levee from the Everglades National Park Basin. Water table elevations in the 8.5 sma were kept below the land surface elevation by pumping water from the 8.5 sma basin into the ENP basin using S357 pump.
  - S357 (capacity = 400 cfs) for 8.5 sma flood control.
- Lake Okeechobee operated according to WSE schedule

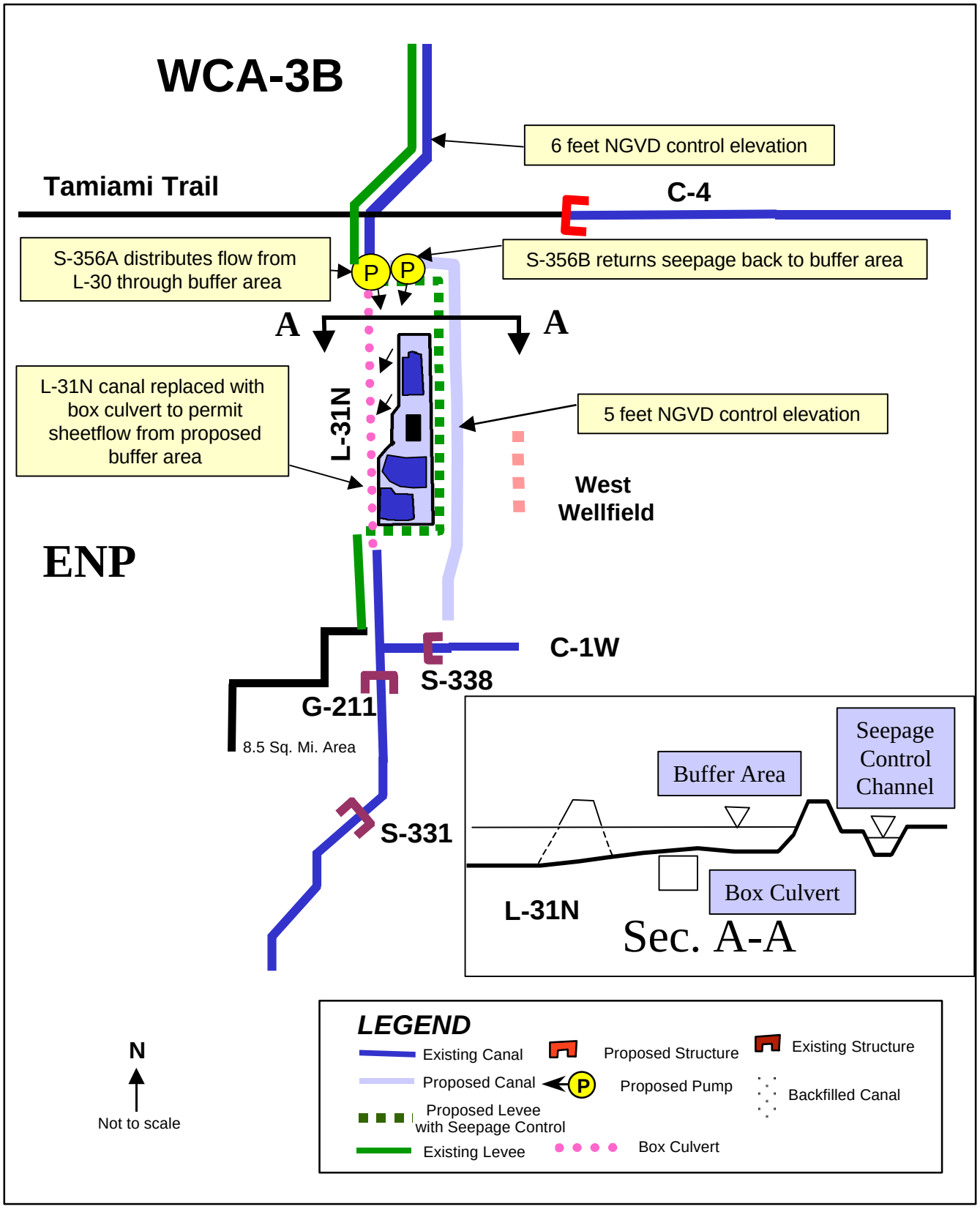

Figure 1. Design concept for STA water quality treatment and seepage management buffer for Modified Water Deliveries Project, Alternative 1.